

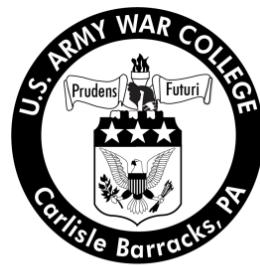
Civilian Research Project

Senior Service College Fellow

Intellectual Property and Technical Data Rights: “It’s About the Money”

by

Lieutenant Colonel Randy Murray
United States Army



United States Army War College
Class of 2012

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**INTELLECTUAL PROPERTY AND TECHNICAL DATA RIGHTS:
“IT’S ABOUT THE MONEY”**

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The intersection between Intellectual Property (IP) and Technical Data Rights is one of the most complicated issues in acquisition management. This issue creates significant problems for both Government and Industry. One of the greatest challenges facing Program Managers today is a renewed emphasis on competition in contracting due to shrinking budgets. Congress and the Under Secretary of Defense for Acquisition, Technology and Logistics (USD AT&L) continue to establish legislation and policy that require greater contractor competition or multiple sources to fulfill government requirements. Intellectual Property is the life-blood of a contractor's business, and the right to protect that Intellectual Property is critical to their maintaining a competitive edge. On the other hand, the availability of technical data and the right to use that data is extremely important for the Government to adequately support an acquisition strategy.

This paper explores current laws and DOD policy with regard to Intellectual Property and technical data and computer software rights and makes recommendations on appropriately balancing the Government's necessary acquisition of technical data to

support procurement and sustainment of weapons systems with contractors' Intellectual Property rights, to support DoD weapons' acquisition programs.

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INTELLECTUAL PROPERTY AND TECHNICAL DATA RIGHTS: "IT'S ABOUT THE MONEY"

Introduction

The Department of Defense (DoD) spends approximately \$700 billion on the nation's defense annually. Approximately \$400 billion of those dollars are divided between products (e.g., sophisticated weapons, space and satellite systems, electronics, fuel and facilities) and services (e.g., information technology (IT), knowledge-based services, facilities upkeep and transportation).¹ The Department of Defense's budget has steadily increased over the last ten years to support operations around the world and the war efforts in Iraq and Afghanistan. The United States is now under tremendous pressure to reduce its rising debt due to the current financial crisis. Due to the financial crisis, the United States Congress passed a Budget Control Act in 2011 that required a reduction in the defense budget by \$487 billion over the next ten years.² A cut in defense spending has not negated DoD's continued requirement to recapitalize and modernize existing military equipment in support of the war effort and future requirements. DoD is conducting a strategic review of the defense strategy and budget priorities. DoD will address the defense reductions by focusing on efficiencies, force structure reductions, procurement adjustments and compensation to meet the cost savings goals.³ DoD has already canceled unaffordable programs and is focusing on sustainment efforts for existing systems. With all of this in mind, this research paper focuses on the inherent conflict between DoD's requirement for intellectual property (IP) rights to acquire, sustain and reduce costs of its weapons systems and private contractors' opposition to relinquishing those rights. This conflict has a profound impact on systems, acquisitions and sustainment costs.

The United States has a free market system based upon capitalism. That means that production and distribution are privately or corporately owned and development is proportionate to the accumulation and reinvestment of profits gained in a free market.⁴ In principle, barring any constraints or intervention from external forces such as the government, competition among producers, in theory, causes commercial companies to develop new technologies, products and services, giving buyers greater selections of goods and better products. This competition should, in turn, yield lower prices. Another tenet of the US economy is the Constitutional protection of exclusive rights in Intellectual Property to authors and inventors for their writings and discoveries. This places at odds the intellectual property system and competition. This is the dilemma or struggle the Defense Acquisitions' process faces.

For the purpose of this paper Intellectual Property means patents, copyrights, trademarks, and trades secrets. The proper acquisition of IP with respect to technical data and computer software rights by the Government is one of the most complex subjects in Federal procurement law. This dilemma is not due to the ambiguity of such regulations, because they are not ambiguous.⁵ The private sector and the Government have competing interest in technical data rights. Contractors' interest in protecting IP from uncompensated exploitation is of such vital importance that they are resistant to including contract clauses providing technical data rights to the Government.⁶ Technical data is recorded information to produce, support, maintain, operate, and upgrade a system. This data enables the government to complete maintenance, work in house, or competitively award contracts for the acquisition and sustainment of a weapon system. The Department of Defense, however, needs adequate access to technical data for its

weapons systems in order to control future costs and maintain flexibility in the acquisition and sustainment of those weapons systems.⁷

Many systems remain in the DoD inventory for decades, and decisions that program officials make during the acquisition process to acquire or not acquire rights to technical data can have far-reaching implications for DoD's ability to sustain the system and competitively procure parts and services in the future. Weapon systems are costly to sustain and maintain in part because they often incorporate technologically sophisticated subsystems and components and need expensive spare parts and logistical support to meet required readiness levels. DoD indicates at least 70 percent of a weapon system's costs are incurred to operate and support the system after it has been acquired. This percentage of operations and support cost varies depending on the time the systems remain in the inventory.⁸ One major factor is related to the sources of development funding, whether by the Government, the contractor (private), or by a combination of private and public funds. Rights in technical data are categorized as: unlimited, government purpose, limited, and specially-negotiated license.

During a 2002 Hearing before the Subcommittee on Technology and Procurement Policy of the Committee on Government Reform, Representative Tom Davis (Virginia) stated:

"Technology now accounts for 50 percent of the United States long-term growth. Information technology and intellectual property are playing a substantial role in the remarkable U.S. productivity gains. The Government is challenged today to find ways to entice innovative companies into collaborating with it on vital R&D and information technology efforts. In addition, it is important for the Government to recognize that the treatment of intellectual property rights will greatly impact the viability of competing alternatives for any government contract as well as the implementation of leading-edge innovation. Intellectual property and research and development procurement are both very complex subjects, and the Government's new role as a partner in innovation, contracting officers, program managers agency legal staffs all need to understand how flexibilities for the

treatment of intellectual property can be used to attract and retain the leading-edge companies.”⁹

Overview: Growing Pressures for Competition

DoD program managers face the challenge of the renewed emphasis on competition. Congress, the President, and the Under Secretary for Defense Acquisition, Technology and Logistics (USD (AT&L)) continue to establish legislation and policies that require more competition. A great number of the most expensive weapon systems are legacy programs for which more competition with technical data rights was not required or acquired due to previous policies that technical data packages (TDP) were not supposed be purchased in favor of using performance-based acquisition (PBA).¹⁰ PBA is a method for acquiring what is required and placing the responsibility for how it is accomplished on the contractor. Figure 1 illustrates the costs and consequences of failing to acquire technical data rights early in the program. The costs of acquiring technical data at the later stages of a weapon system’s life are very expensive and may be cost prohibitive.

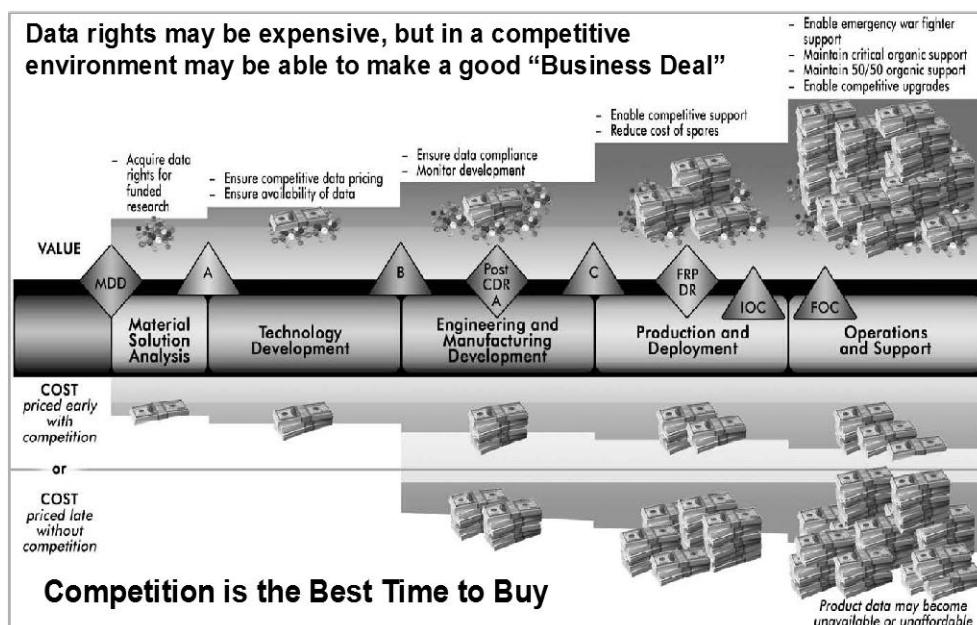


Figure 1 - Defense Acquisition Management System¹¹

DoD Directive 5000.01, The Defense Acquisition System, states that “competition shall provide major incentives to industry and Government organizations to innovate, reduce cost, and increase quality.”¹² It also calls for performance-based acquisition to maximize competition, innovation, and interoperability, and to enable greater flexibility in capitalizing on commercial technologies to reduce costs.¹³ DoD Instruction 5000.02, Operation of the Defense Acquisition System, identifies a statutory requirement to include a Data Management Strategy as part of the acquisition strategy for all acquisition category (ACAT) I and II programs. ACAT I programs are Major Defense Acquisition Programs (MDAPs). An ACAT 1 MDAP is defined as a program estimated by USD (AT&L) to require eventual expenditure for research, development, test, and evaluation (RDT&E) of more than \$365 million (FY 2000 constant dollars) or procurement of more than \$2.19 billion (FY 2000 constant dollars), or those designated by the USD (AT&L) to be ACAT I 10 USC §2430.¹⁴ ACAT II programs are defined as those acquisition programs that do not meet the criteria for an ACAT I program, but do meet the criteria for a major system. A major system is defined as a program estimated by the DoD Component Head to require eventual expenditure for RDT&E of more than \$140 million (FY 2000 constant dollars) or for procurement of more than \$660 million (FY 2000 constant dollars) or those designated by the DoD Component Head to be ACAT II (10 USC §2302(5)).¹⁵ The purpose of the Data Management Strategy is to document the assessment of the data required to design, manufacture, and sustain the system, as well as to support re-competition for production, sustainment, or upgrades.¹⁶

The Weapons Systems Acquisition Reform Act (WSARA) of 2009, Public Law 111-23, requires measures for the acquisition strategy for each major system to ensure competition, or the option of competition, at both the prime contract level and the

subcontract level (at such tier or tiers as are appropriate) throughout the life-cycle of such program as a means to improve contractor performance.¹⁷ The WSARA includes ten measures to ensure competition, three of which pertain specifically to data rights: (1) use of modular, open architectures to enable competition, (2) acquisition of complete technical data packages, and (3) licensing of additional suppliers. The WSARA also includes competition considerations for operations and sustainment: “Whenever a decision regarding source of repair results in a plan to award a contract for performance of maintenance and sustainment of a major weapon system, the Secretary of Defense shall take actions to ensure that, to the maximum extent practicable and consistent with statutory requirements, contracts for such maintenance and sustainment are awarded on a competitive basis and give full consideration to all sources (including sources that partner or subcontract with public or private sector repair activities).”¹⁸

The 2007 John Warner National Defense Authorization Act, Section 802, directs the Secretary of Defense to require program managers for major weapons systems and subsystems to assess the long-term technical data needs of such systems and subsystems and establish corresponding acquisition strategies needed to sustain such systems and subsystems over their life cycle. It requires that, in the case of a challenge to a use or release restriction of technical data of a contractor or subcontractor for a major system or subsystem on the basis that the system, subsystem, or component was developed exclusively at private expense, the burden of proof of such private development shall be on the contractor or subcontractor.¹⁹

The 2011 National Defense Authorization Act, Section 824 (Guidance Relating To Rights In Technical Data), dictates that the government “(1) preserves the option of competition for contracts for the production and sustainment of systems or subsystems

that are developed exclusively with Federal funds as defined in accordance with the amendments made by this section and (2) is not required to pay more than once for the same technical data.”²⁰

In September 2010, the Undersecretary of Defense for Acquisition, Technology and Logistics issued a memorandum to the Department of Defense Acquisition community to implement the “Better Buying Power” (BBP): Guidance for Obtaining Greater Efficiency and Productivity in Defense Spending” initiative. The Better Buying Power efficiency initiative is a 23-point strategy, which seeks to restore affordability in defense procurement and to improve defense industry productivity. Each point was devised with input from the defense acquisition work force and from partners in industry. Major themes of the strategy, according to USD (AT&L)’s guidance roadmap, include targeting affordability and controlling cost growth, incentivizing productivity and innovation in defense, promoting competition, improving tradecraft in services acquisition, and reducing non-productive processes and bureaucracy to get the most out of each Defense Department budget dollar.²¹ The major area, promoting real competition, which pertains to this paper, encompasses avoiding direct buys and other substitutes for real competition. It also requires open systems architecture and sets rules for acquisition of technical data rights.²²

Contractor Perspective on Intellectual Property

Intellectual property, from the perspective of private industry, represents the very foundation of the creative processes that results in the goods or services it offers. It is the means by which a company asserts control over its unique expertise in a field.²³ Intellectual property is a precious corporate asset and a strategic business tool. It allows businesses to compete successfully in the federal and commercial sectors. The

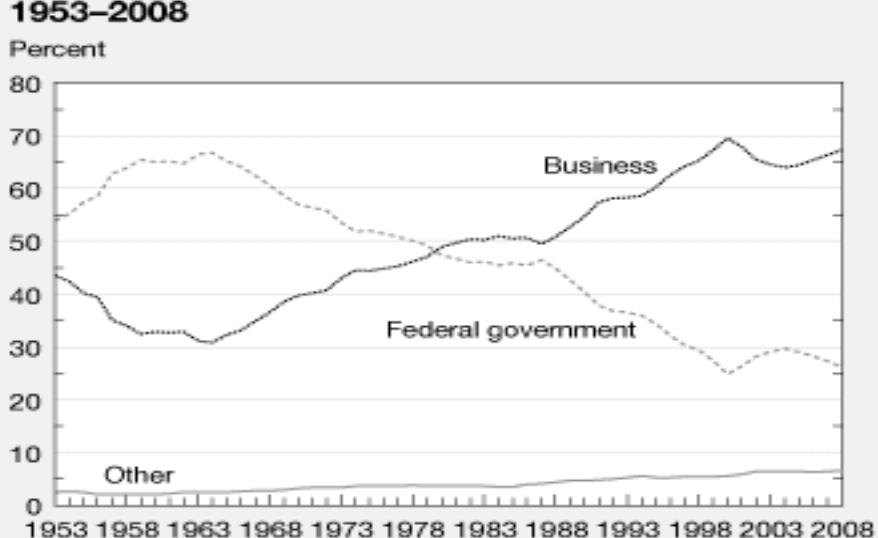
increasing significance of this intangible asset is forcing corporate entities to actively manage intellectual property as a key driver for building and sustaining competitive advantage.²⁴

During the Cold War and space race years, the Government in general and the DoD in particular drove R&D. The Government's need for advanced technologies continues to grow at a seemingly exponential rate. While needs are growing, the Government's control over the development has diminished over the years. Recent trends indicate private sector investment is much greater than the Federal Government's. According to the National Science Foundation, the Government share of R&D funding was 67 percent in the 1960's, fell to 47 percent in the 1980's, and dropped to 26 percent in 2000.²⁵ Instead of driving research and its outcomes, the government must increasingly rely on the private sector. The Government's ability to successfully deal with issues over intellectual property constitutes a key factor in being able to acquire the new technologies necessary to meet increasingly sophisticated operational needs.²⁶

The chart below (Figure 2 - National R&D Expenditures by Source) illustrates the pendulum swing in R&D expenditures from the Government to the private sector. The chart also demonstrates that while the DoD largely financed its own technology development efforts prior to the early 1980's, that phenomenon has changed dramatically over the years. Today, DoD is a very important player, but no longer dominant. As of 2008, close to 70% of all United States R&D expenditures were funded by commercial businesses. Thus, an enormous amount of cutting-edge technology is being developed in the private sector without DoD financing. DoD procurement policies discourage participation by commercial vendors, particularly those in high technology

disciplines that will likely have major impacts on DoD's ability to achieve its procurement objectives. Companies will not sell their products to DoD under contracts that threaten to allocate to DoD expansive rights to technologies developed in Independent Research and Development (IRAD) projects. As a result critical advanced technologies and products in telecommunications, super computers, and software simply will not be available to be used in DoD procurements.²⁷ "Limited Rights" may be the only terms under which leading-edge contractors might be willing to provide technical data to the Government for development efforts.

**Figure 4-4
National R&D expenditures, by funding source:
1953–2008**



NOTES: Data for 2008 are preliminary. Other includes universities and colleges, state and local government, and other nonprofit organizations.

SOURCE: National Science Foundation, Division of Science Resources Statistics, National Patterns of R&D Resources (annual series). See appendix table 4-7.

Science and Engineering Indicators 2010

Figure 2 - National R&D Expenditures by Source²⁸

Historical Background

Legislation and policies governing the DoD acquisitions process have evolved since World War II as both parties attempt to achieve a balance between a contractor's ability to retain rights to proprietary data and the Government's need for access to technical data to promote competition, sustain systems throughout the systems lifecycle, and achieve other acquisition goals. Even so, the core of modern-day Government contracting at the Federal level is based on two laws, the Armed Services Procurement Act of 1947 and the Federal Property and Administrative Services Act of 1949. These laws sought to codify all the various contract laws that had developed over the years and provide overarching guidelines on Government procurement.²⁹ The two laws also resulted in the creation of two sets of regulations designed to oversee affairs in the realm of government contracts—the Armed Services Procurement Regulation (ASPR) of 1947 for military agencies and the Federal Procurement Regulation (FPR) for civilian agencies.³⁰ The 1947 Armed Services Procurement Regulation Act established procedures and regulations applicable to all purchases and contracts for supplies or services made by the Department of Defense. The ASPR was amended in 1955 and was the first procurement regulation containing technical data coverage. The contract clause was included in all contracts for experimental, developmental, or research work. The only Government limitation in this ASPR clause was “government purpose” rights for reproduction, use, or disclosure of the contractor's submitted data.³¹

“Prior to 1980, various statutes and regulations concerning patents established the Government's right to take title to Federally-funded patents and freely distribute the information to the general public. This position has its foundation in the belief that the Government's funds (i.e., taxpayers' funds) were being used to conduct the research;

therefore, the results should be made available to the public (i.e., the taxpayers). While the Government took title to the patent, it provided the contractor who conducted the research a nonexclusive license. The patent that resulted from these sponsored projects was typically freely published or provided to any person who requested access to it. Commercial companies disagreed with the free and open access policy to patents. Envisioning commercial applications, inventors of new technology wanted to keep for themselves any economic benefits resulting from their research. Commercial companies depend heavily on the proper protection of their research to recoup any prior investments.³² This situation became unattractive to contractors. As a result, technologies that were not commercially viable were not pursued. This led the enactment of the Bayh–Dole Act or Patent and Trademark Law Amendments Act, which dealt with intellectual property arising from Federal Government-funded research. Adopted in 1980, the Bayh-Dole Act gave U.S. universities, small businesses and non-profit organizations intellectual property control of their inventions and other intellectual property that resulted from such funding.³³

In 1984, Congress enacted statutory requirements for DoD's acquisition of technical data under its procurement contracts because DoD was altering policy permitting unlimited modifications to the data rights. The Defense Procurement Reform Act of 1984, enacted as a part of the 1985 DoD Authorization Act, for the first time specified requirements addressing both technical data rights and technical data acquisition by DoD agencies.³⁴

Fundamental changes over a two decade period also led to the 1984 establishment of the Federal Acquisition Regulation (FAR), which covered all federal agencies. The FAR is the principal set of rules in the Federal Acquisition Regulation

System. Government business is conducted in accordance with its rules, and contractors must comply with its procedures or risk being eliminated from consideration.³⁵ The FAR guides and directs DoD program managers (PMs) in acquisition planning, competition requirements, contract award procedures and warranties. DoD has supplemented the FAR to describe its own procedures. This supplement is called the Defense Federal Acquisition Regulation Supplement (DFARS).

In the 1990s, the Government turned its focus to buying more “off-the-shelf” commercial products rather than requiring contractors to develop government noncommercial items. This led to the Federal Acquisition Streamlining Act (FASA) of 1994. The FASA legislation was one of the most tangible results of acquisition reform to that point in history. This Act focused on simplifying the procurement process and removing barriers to efficient and effective program management. Further, it promoted and provided for increased use of commercial practices and commercial products in DoD systems acquisition.³⁶ Two later statutes, the 1995 Federal Acquisition Reform Act (FARA) and the 1996 Clinger-Cohen Acts did not directly deal with technical data, however, they further streamlined the acquisition process by emphasizing competition, information technology management and commercial items.

By 1990, the DoD R&D budget had shrunk considerably and the private sector was now the predominant leader in spending efforts on leading-edge technologies. In 2000, the USD (AT&L) signed a policy letter announcing a fundamental shift in focus for negotiating Intellectual Property contract terms with commercial firms that ordinarily do not do business with DoD. In 2001, the USD (AT&L) issued a “Layman’s guide” to the acquisition workforce for treatment of IP: “Intellectual Property: Navigating Through Commercial Waters”. The intent of the guide was to “create a new environment for

negotiating IP terms and condition that protect the true interest of the Government – incorporating technologically advanced solutions into weapons systems and management systems deployed.”³⁷ Subsequently, in 2001 the USD (AT&L) convened a team of DoD personnel and industry advisors to evaluate certain patent clause waiver possibilities and the use and protection of industry’s proprietary data and to revise the Defense Federal Acquisition Regulation Supplement (DFARS) part 227, Patents, Data and Copyrights.³⁸

The most recent reform is the previously mentioned Weapons Systems Acquisition Reform Act (WSARA) of 2009, emphasizing the use of modular, open systems architecture to enable competition. The DoD Acquisition process is under continual reform to balance the needs of the Government and contractors. The DoD acquisition process is a highly complex process of laws and regulations that will continue to evolve.

Intellectual Property Rights

Intellectual property is a term referring to a number of distinct types of creations of the mind for which a set of exclusive rights are recognized under the corresponding fields of law. Under intellectual property law, owners are granted certain exclusive rights to a variety of intangible assets, such as musical, literary, and artistic works; discoveries and inventions; and words, phrases, symbols, and designs. Common types of intellectual property rights include patents, copyrights, trade secrets, and trademarks.³⁹ Federal statutes permitting patenting and copyrighting have been enacted under the authority of Article 1, Section 8 of the U.S. Constitution, which states: “Congress shall have the power to promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings

and Discoveries.”⁴⁰ Thus law has provided an incentive to inventors and authors (the acquisition of possible wealth) and to industry (the improvement of their competitive position). This has stimulated the technological growth of the country. The main incentive has been provided by the patent laws, which grant to an inventor the privilege of preventing others from making, using, or selling his creation, without his permission.⁴¹

A patent is a statutory monopoly granted by the Federal Government for a limited time to an inventor. It implements the right under patent laws to exclude others from making, using or selling the invention claimed in the patent -- and the opportunity to enforce that control by court action against infringers. In return for the grant, the inventor gives the public the right to free and unrestricted use of the invention after the expiration of the patent, which is 20 years from the applications date of the patent. While patents cannot be renewed, any improvement in technology that is also patentable would also provide 20 years protection on the improvement.⁴²

Copyrights are a set of exclusive rights to copy, modify, perform, display, distribute copies, and publicly perform or digitally transmit the copyrighted work. Unlike patents, a copyright is tied to a specific product or expression of the work. Anomalously, however, copyright law is the primary vehicle for protecting computer software. This is because software ultimately is a series of ones and zeros translated into higher machine languages (source and object codes). Since a computer program in a generic sense is “text” – though intended to be read by specialists and machines – U.S. law has treated the software’s source and object code as copyrighted literary works.⁴³ The protectable subject matters are original, creative works fixed in a tangible medium of expression (e.g., literary, musical, or audiovisual works, computer programs).

Copyrighted work is protected for the author's life plus 70 years and works made for hire last for 95 years after publication or 120 years after creation for corporate work.⁴⁴

A trade secret is a formula, practice, process, design, instrument, pattern, or compilation of information, which is not generally known, or reasonably ascertainable, by which a business can obtain an economic advantage over competitors or customers. In some jurisdictions, such secrets are referred to as "confidential information" or "classified information". Owners of trade secrets seek to protect trade secret information from competitors by instituting special procedures for handling it, as well as technological and legal security measures.⁴⁵ The protectable subject matters are offered potentially unlimited status as long as it remains classified as secret.⁴⁶ Trade secrets laws are the preferred method of Intellectual Property rights protection by Government contractors.

A trademark is a word, name, symbol, device or combination thereof adopted or used by manufacturers or merchants to identify their goods or services and to distinguish them from those manufactured or sold by competitors. A trademark protects the consumer's association of the particular product with the products legitimate source; the mark guarantees uniform quality to purchasers. Common law trademark protection begins when a mark first is used in commerce. As a mark is used on goods, consumers begin to associate the mark with a particular source. As long as the linkage exists, the company retains the right to control the mark. If the owner ceases to use a mark then it can be considered "abandoned." If a mark acts as a source identifier, it can be enforced at the Federal and state levels. Trademark protections can be applied for at the state, Federal and International levels.

Data License Rights

This section briefly examines the various types of licensing for technical data and computer software, both noncommercial and commercial, to the DoD as set forth in and governed by the Defense Federal Acquisition Regulation Supplement (DFARS) part 227. The laws governing DoD systems acquisitions have evolved tremendously over the years, however this paper looks at the current policy set forth in the DFARS. It is important to understand upfront that contractors generally retain copyrights or patents title to technical data and software delivered under contract to the Government. The Government receives a license to utilize the data dependent on the levels of license rights.⁴⁷ The current regulations grant the government different license rights for noncommercial technical data, commercial technical data, commercial computer software, and noncommercial computer software. The treatment of other types of intellectual property -- patents, copyrights, trademarks and trade secrets -- is outside the scope of this paper. The rights are defined as either unlimited rights, limited rights, restricted rights, government purpose rights or specially negotiated license rights.

Generally, the degree of rights the government may procure is determined by what is called the funding test. If technical data was funded at Government expense, the Government obtains unlimited rights to the data.⁴⁸ Limited or restricted rights would apply if the data was funded exclusively at contractor expense (private).⁴⁹ If technical data development was funded by a mix of Government and contractor money then government purpose rights (GPR), or specially-negotiated license rights⁵⁰ (tailored data rights, but not less than limited rights in noncommercial technical data or restricted rights in noncommercial computer software) will apply.

The Government automatically receives certain license rights for data regardless of funding. These automatic rights include unlimited rights with respect to: form, fit and function (FFF) data; computer software documentation; and installation, operations, maintenance, and training (IOMT) data. Also, the Government receives unlimited or government purpose rights if they directly funded the development of related items, components or processes (ICPs).⁵¹ There are, however, certain rights the Government cannot compel a contractor to give up. The contractor shall not be required as a condition of being responsive to a solicitation or as a condition for the award of a contract to relinquish to the Government any rights in technical data greater than limited rights (technical data) and restricted rights (software) if these are legitimately offered in accordance with 10 USC §2320(a)(2)(F) and DFARS 207.106(b)(1)(a).⁵² The Government is still entitled to basic data such as Installation, Operation, Maintenance, and Training and Form, Fit, and Function.

Technical Data

Technical data is defined in the DFARS as “recorded information, regardless of the form or method of the recording, of a scientific or technical nature (including computer software documentation). The term does not include computer software or data incidental to contract administration, such as financial and/or management information.”⁵³ Technical data is also needed to identify form, fit and function; to conduct military operations, maintenance, installation, or training and effect emergency repair and overhaul.⁵⁴

Computer Software

Computer software consists of computer programs, source code, source code listings, object code listings, design details, algorithms, processes, flow charts, formulae and related material that would enable the software to be reproduced, recreated, or recompiled, but excludes computer data bases or computer software documentation.⁵⁵

Commercial Items

A commercial item as defined by the Federal Acquisition Regulation (FAR) is one customarily used for nongovernmental purposes that has been or will be sold, leased, or licensed, or offered for sale to the general public. An item that includes modifications customarily available in the commercial marketplace or minor modifications made to meet federal government requirements is still a commercial item. In addition, services such as installation, maintenance, repair, and training that are procured for support of an item described above are considered commercial items if they are offered to the public under similar terms and conditions or sold competitively in substantial quantities based on established catalog or market prices.⁵⁶ Commercial items are presumed to have been developed exclusively at private expense. However, the Government does retain unlimited rights in form, fit and function data, technical data which describes a portion of a modification to a commercial item that is required to meet a Government specification, and data relating to commercial items if the contract expressly includes a requirement for operations, maintenance, installation and training.

Unlimited Rights in Noncommercial Technical Data

Unlimited rights means rights to use, modify, reproduce, perform, display, release, or disclose technical data in whole or in part, in any manner, and for any purpose whatsoever, and to have or authorize others to do so.⁵⁷ When the Government

has unlimited rights in technical data, it may make the data freely available to anyone who wants it.

The Defense Federal Acquisition Regulation states that Government has unlimited rights in technical data that are —

- Data pertaining to an item, component, or process (ICP) which has been or will be developed exclusively with Government funds;⁵⁸
- Studies, analyses, test data, or similar data produced for the contract, when the study, analysis, test, or similar work was specified as an element of performance;⁵⁹
- Created exclusively with Government funds in the performance of a contract that does not require the development, manufacture, construction, or production of items, components, or processes;⁶⁰
- Form, fit, and function data;⁶¹ “Form, fit, and function data mean technical data that describes the required overall physical, functional, and performance characteristics (along with the qualification requirements, if applicable) of an item, component, or process to the extent necessary to permit identification of physically and functionally interchangeable items.”⁶²
- Necessary for installation, operation, maintenance, or training purpose (other than detailed manufacturing or process data);⁶³
- Corrections or changes to technical data furnished to the contractor by the Government;⁶⁴
- “Otherwise publicly available or have been released or disclosed by the contractor or subcontractor without restrictions on further use, release or disclosure, other than a release or disclosure resulting from the sale, transfer, or other assignment of interest in the technical data to another party or the sale or transfer of some or all of a business entity or its assets to another party,”⁶⁵
- “Data in which the Government has obtained unlimited rights under another Government contract or as a result of negotiations;”⁶⁶
- “Data furnished to the Government, under this or any other Government contract or subcontract thereunder;”⁶⁷—
- “Government purpose license rights or limited rights and the restrictive condition(s) has/have expired;”⁶⁸ and

- “Government purpose rights and the Contractor’s exclusive right to use such data for commercial purposes has expired.”⁶⁹

Unlimited Rights in Noncommercial Computer Software and Documentation

The Government also shall have unlimited rights in the following:

- Computer software developed exclusively with Government funds;⁷⁰
- Computer software documentation required to be delivered under this contract;⁷¹
- Corrections or changes to computer software or computer software documentation furnished to the contractor by the Government;⁷²
- Computer software or computer software documentation that is otherwise publicly available or has been released or disclosed by the contractor or subcontractor without restriction on further use, release or disclosure, other than a release or disclosure resulting from the sale, transfer, or other assignment of interest in the software to another party or the sale or transfer of some or all of a business entity or its assets to another party;⁷³
- Computer software or computer software documentation obtained with unlimited rights under another Government contract or as a result of negotiations;⁷⁴
- Computer software or computer software documentation furnished to the Government, under this or any other Government contract or subcontract there under with⁷⁵
 - Restricted rights in computer software, limited rights in technical data, or government purpose license rights and the restrictive conditions have expired;⁷⁶ or
 - Government purpose rights and the contractor’s exclusive right to use such software or documentation for commercial purposes has expired.⁷⁷

Limited Rights in Noncommercial Technical Data

Limited rights are the rights to use, modify, reproduce, release, perform, display, or disclose technical data, in whole or in part, within the Government.⁷⁸ The Government receives limited rights when the contractor funded 100% of the development of an ICP. The Government may not, without the written permission of the

contractor asserting limited rights, release or disclose the technical data outside the Government, use the technical data for manufacture, or authorize the technical data to be used by another party, except that the Government may reproduce, release, or disclose such data or authorize the use or reproduction of the data by persons outside the Government if, the reproduction, release, disclosure, or use is, (1) necessary for emergency repair and overhaul;⁷⁹ or (2) a release or disclosure to a foreign government, of technical data (other than detailed manufacturing or process data) when use of such data by the foreign government is in the interest of the Government and is required for evaluational or informational purposes;⁸⁰

Restricted Rights in Noncommercial Computer Software and Documentation

The term ‘restricted rights’ relates to computer software and software documentation. When the development of computer software is funded exclusively at contractor expense (private), the Government receives restricted rights in the data for which the Government has not already received automatic unlimited rights. The contractor in this case asserts restricted rights because the technical data was developed at private expense and is not publically available. “Restricted rights” means the Government only has rights to use a computer program with one computer at one time. The program may not be accessed by more than one terminal or central processing unit or time shared unless otherwise permitted by the contract.⁸¹ The government may make the minimum number of copies of the computer software required for safekeeping (archive), backup, or modification purposes;⁸² The Government cannot decompile, disassemble, or reverse engineer the software.⁸³ The government must have the contractor’s permission to release to anyone.

Government Purpose Rights in Noncommercial Technical Data and Computer Software

The term "government purpose rights" (GPR) describes an intermediate class of rights, which the Government may acquire in technical data, software and software documents. In this case, neither the Government nor the contractor exclusively funds the development of the ICP. Government purpose rights means the rights to - use, modify, reproduce, release, perform, display, or disclose technical data, computer software or computer software documentation within the Government without restriction.⁸⁴ It also includes the right to release or disclose technical data, computer software or computer software documentation outside the Government and authorize persons to whom release or disclosure has been made to use, modify, reproduce, release, perform, display, or disclose that data, software or documentation for United States Government purposes.⁸⁵ This also covers competitive procurement.

While disclosure explicitly includes Foreign Military Sales, it does not permit the Government to allow others to use the data for commercial purposes.⁸⁶ Thus GPR gives the Government greater rights in the data than when it obtains "limited rights," but less rights than when it obtains "unlimited rights." Figure 3 shows the Government license rights in technical data. Government rights for noncommercial software are depicted in figure 4 below.

Small Business Innovative Research Rights (SBIR) in Technical Data and Software and Software Documentation

The Small Business Innovation Research (SBIR) program is a special class of rights established by the Federal government. This is a highly competitive program set up to encourage domestic small businesses to engage in Federal Research/Research and Development (R/R&D) that has the potential for commercialization.⁸⁷ The SBIR was

established under the Small Business Innovation Development Act of 1982, Public Law 97-219.⁸⁸ “The SBIR program can provide expanded opportunities for one of the Nation’s vital resources, its small businesses, foster invention, research, and technology create jobs, and increase this Nation’s competitiveness in international markets.”⁸⁹ The SBIR program is structured into three phases. Phase I is to establish the technical merit, feasibility or commercial potential of a R/R&D effort and the Government awards not more than \$150,000 total cost for 6 month.⁹⁰ Phase II is a continuation of Phase I based upon the results of technical merit and commercial potential. Only Phase I awardees are eligible for Phase II. SBIR Phase II contracts do not exceed \$2,000,000 for 2 years.⁹¹ The Phase III objective is, where appropriate, the small business pursues commercialization objectives resulting from the Phase I/II R/R&D activities. The SBIR program does not fund Phase III.⁹²

The Government has SBIR rights to data that are the same government purpose rights in data except that the restriction on the Government use expires five years after completion of the project from which the data were generated.⁹³ The Government may not release or disclose SBIR data to any person, other than its support services contractors, except (1) as expressly permitted by the Contractor; (2) for evaluation purposes; or (3) a release, disclosure, or use that is necessary for emergency repair or overhaul of items operated by the Government.⁹⁴

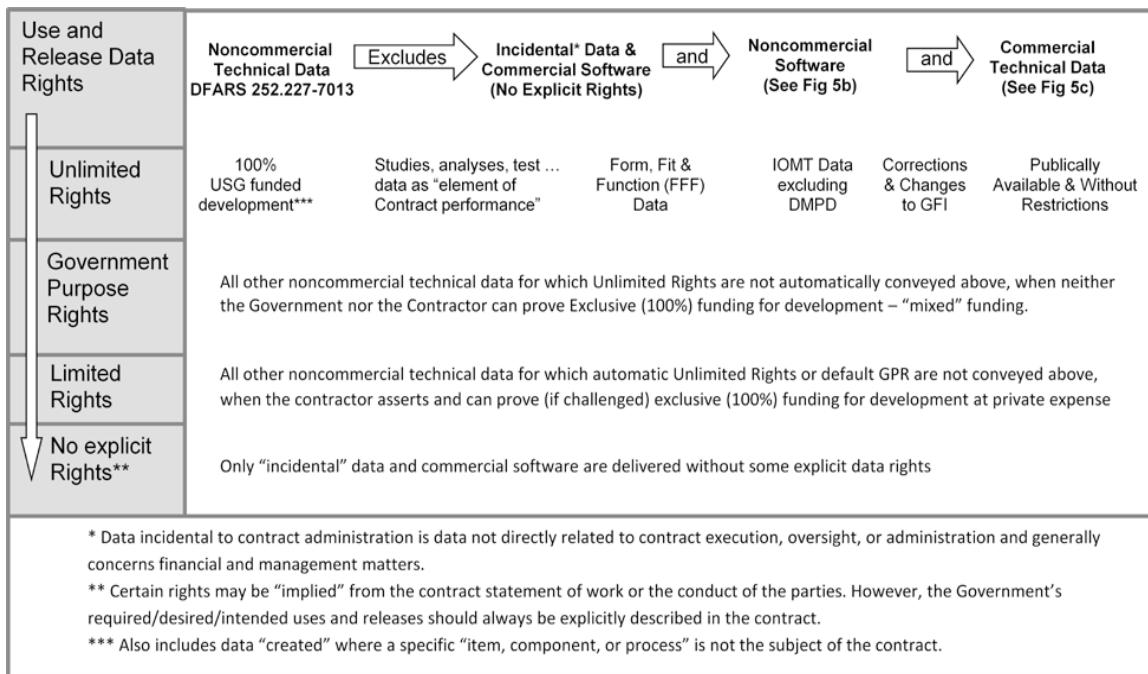


Figure 3 - Noncommercial Technical Data Rights⁹⁵

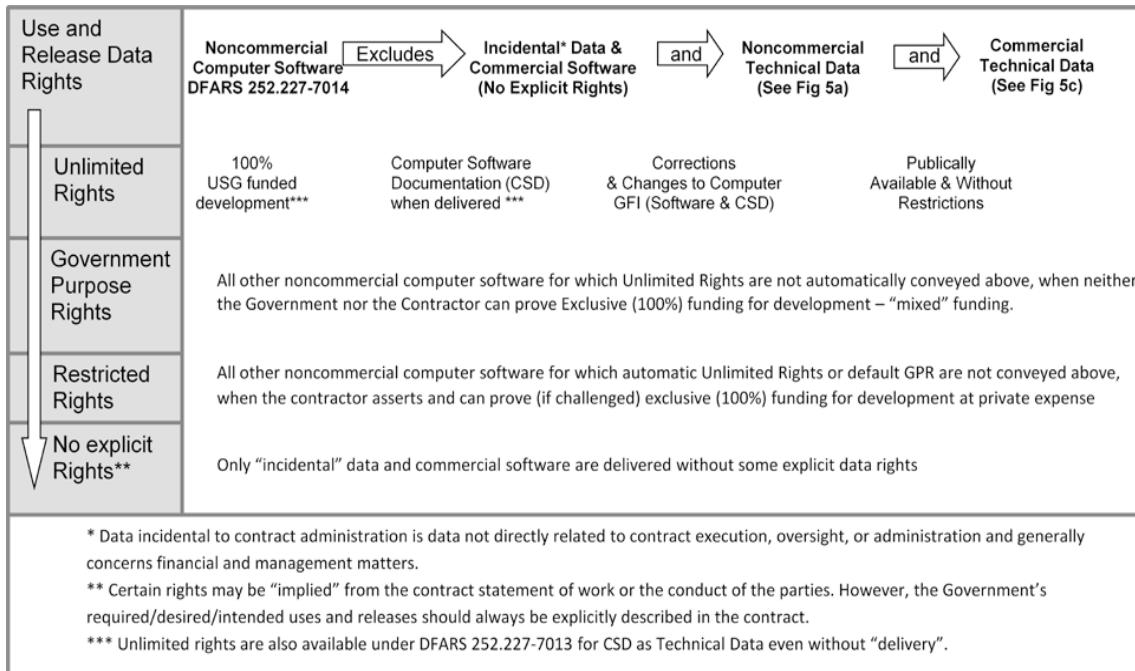


Figure 4 - Noncommercial Software Rights⁹⁶

Rights in Commercial Items and Commercial Software

Commercial items are treated separately in the DFARS, which governs the rights for DoD agencies. Generally, the Government can use technical data on commercial items only within the Government. The Government cannot use the technical data to manufacture additional quantities of the commercial items or release, perform, display, disclose, or authorize use of the technical data outside the Government without the contractor's written permission.⁹⁷ Figure 5 depicts the Government technical data rights to commercial items.

Exceptions to the policy where the Government shall have the unrestricted right to use, modify, reproduce, release, perform, display, or disclose technical data, and to permit others to do so include:

- “Have been provided to the Government or others without restrictions on use, modification, reproduction, release, or further disclosure other than a release or disclosure resulting from the sale, transfer, or other assignment of interest in the technical data to another party or the sale or transfer of some or all of a business entity or its assets to another party”⁹⁸
- Are form, fit, and function data;⁹⁹
- Data needed for operation, maintenance, installation, or training (other than detailed manufacturing or process data);¹⁰⁰
- Data previously provided to the Government under a prior contract; or
- Licensing agreement through which the Government has acquired the rights to use, modify, reproduce, release, perform, display, or disclose the data without restrictions.¹⁰¹

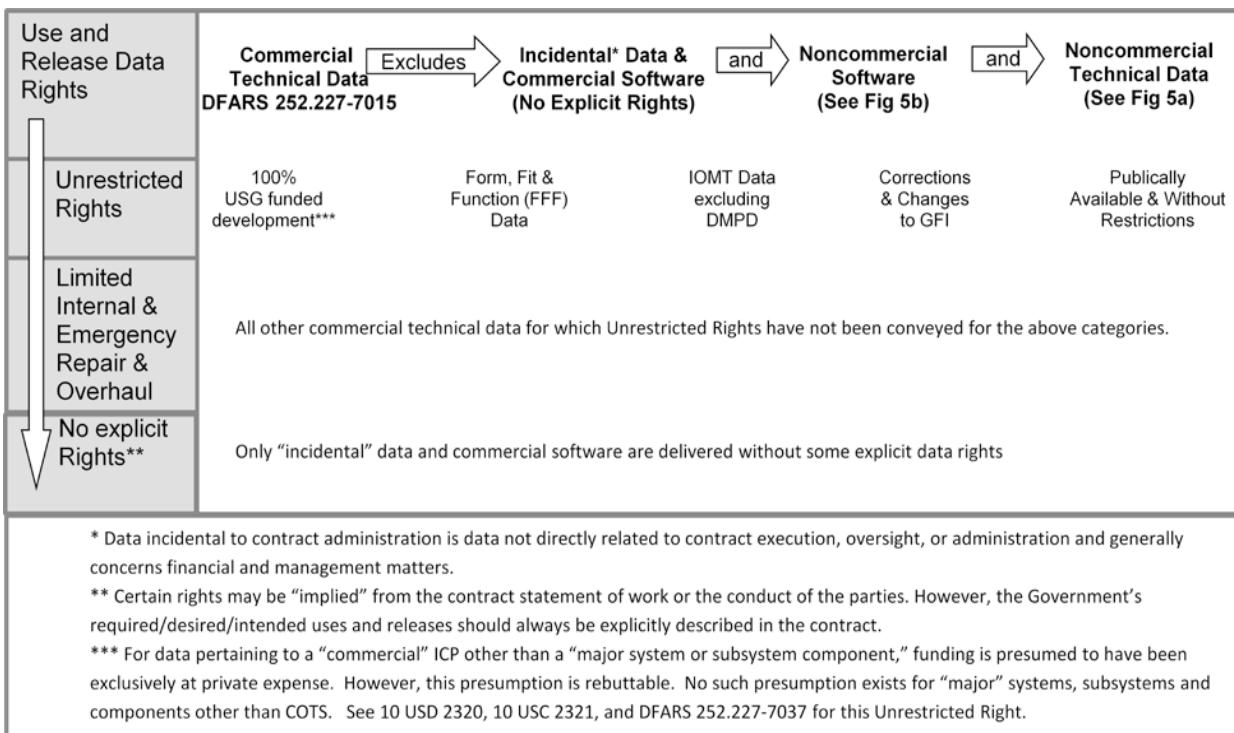


Figure 5 – Commercial Technical Data Rights¹⁰²

Specially-Negotiated Rights in Technical Data and Computer Software

There are special cases where occasionally the Government obtains rights in technical data, computer software or software documentation that do not fall within the standard categories of rights defined by the DFARS. Specially-negotiated rights give both the Government and contractors the ability to negotiate a non-standard license. In this case, the government must gain at least equivalent to limited rights for technical data and must gain at least equivalent to restricted rights for software and software documentation.¹⁰³

Contractor Data Rights Assertions

The DFARS requires contractors, as part of the proposal process, to provide the Government explicit assertions regarding any data identified in the Government's solicitation for which the contractor asserts the Government should take less than

unlimited rights.¹⁰⁴ The assertions must be done prior to contract award and incorporated in the contract. Noncommercial technical data and noncommercial computer software may be delivered only with the following contractually authorized markings for copyright, government purpose rights, restricted rights (computer software), limited rights (technical data) and special license rights.¹⁰⁵

Intellectual Capital Considerations

Governmental control over technical data is a powerful tool, however it does not always guarantee competition. Technical data is intellectual property, but is not the same as intellectual capital. When the government contracts with a company for product development, it is tapping into that company's intellectual capital. Technical data is an important part of intellectual capital , however, it is only a part of the equation.¹⁰⁶ It takes all the interrelated components of intellectual capital to deliver, maintain, sustain and improve capability. Technical data, in and of itself, separated from the company's intellectual capital , may have diminished worth. The four components of intellectual capital are: human, renewable, structural and relationship capital.¹⁰⁷ See figure 6.

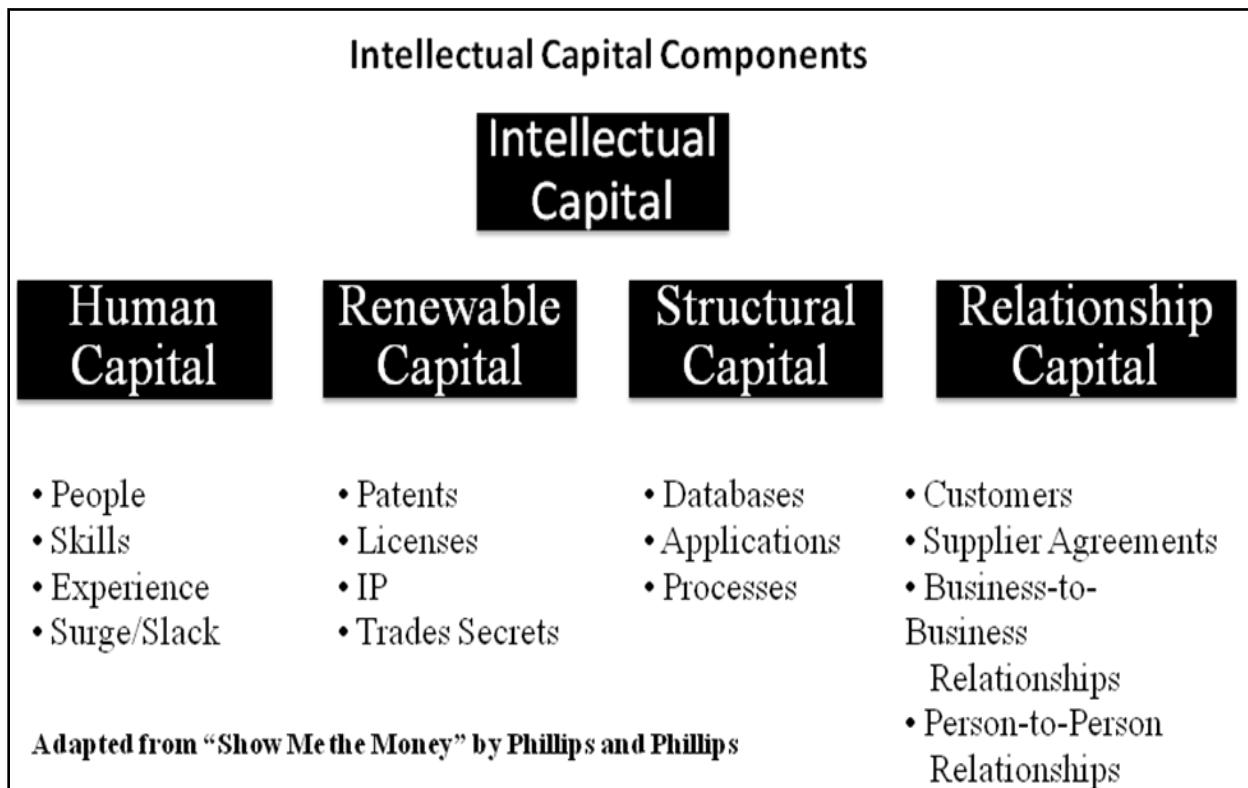


Figure 6 - Contractor Intellectual Capital Components¹⁰⁸

Human capital is the contractor's collection of expertise and experience. Without expertise and experience there is no technical data development. It's the company's human capital that is the driving force behind the creation of technologies. Companies recruit and maintain the talent necessary for profitability and growth. They continually manage their bench of talent to meet the requirements of the product lifecycle.¹⁰⁹ Companies have greater flexibility compared to the Government to surge or reduce their workforce for cost effectiveness. They match the required work at the point of the product life cycle with the work experience and expertise. If the creation of the technical data requires a special skillset unique to a particular company or contractor, that technical data may not be a good candidate for Government control with the intent to compete in the future. The program office will need to consider the application of technical data in the acquisition strategy and the effect of human capital.¹¹⁰

Renewable capital is the contractor's collection of intellectual properties such as patents, licenses, and technical data. Renewable capital leads to marketable innovations like products, services and technology. It is the interconnectivity between patents, licenses, and technical data that makes the transference of technical data outside of the company a risk to the company's competitiveness. This is why companies are reluctant to part with their intellectual property. There may be tremendous dependencies between renewable capital and technical data under government control and the company's patents and licenses.¹¹¹

Structural capital refers to the company's work processes. This is the support structure that consist of buildings, hardware, software, proprietary databases, and processes. The output of the work process is the documentation. Sometimes the contractor may deliver the Government technical data that is incomplete or of limited utility due to the dependency on particular structural capital. "For example, the contractor may provide mechanical drawings as technical data in Adobe Acrobat format. These drawings may need to be in the SolidWorks format to be useful to future bidders."¹¹² Dependencies for technical data format must be considered by the program office when developing the acquisition strategy to ensure appropriate applications and databases, and planning to have access for future competition.

The last component of intellectual capital is the crucial aspect of the relationship capital network, such as the company's sources of contacts and suppliers. The Government may not have a true understanding of this component of intellectual capital because it is not normally visible or operates in the background. Relationship capital includes access to information such as parts availability, raw material changes and

alternate sources. It is a contractor's unique set of relationships that might not be able to be duplicated.¹¹³

DoD program managers must consider some of the limitations that may come with technical data and plan accordingly. In the current environment where private sector R&D spending accounts for almost three-fourths of the total spent in the United States, the government must ensure that its policies and procedures reflect this partnership for innovation.¹¹⁴

GAO Reports Technical Data Rights Over the Decade

The Government Accountability Office (GAO) has produced several reports over the last decade on the subject of technical data rights and its effects on DoD acquisition programs. The GAO has reported a lack of access to technical data and lack of rights in that data have been identified as a cause or contributing factor in higher costs and hindrances to meeting defense acquisition requirements. Program offices often have to resort to developing new ways of increasing production and buying spare parts, including soliciting more vendors.

The GAO pointed out in a 2002 report (GAO-02-306) on logistics support for weapons systems that the lack of technical data placed a limitation on the military to efficiently maintain its equipment.¹¹⁵ The report implies that some program offices have insufficient access to technical data because they believed that the prices requested by contractors that owned the data were unaffordable.¹¹⁶ For example, the report states, "the Army tried to buy technical data to develop in-house capability to repair its SPITFIRE radio terminals. The manufacturer was willing to sell the data for \$100 million – almost as much as what the entire program cost (\$120 million) from 1996 through 2001. Program officials decided they could not afford the data, and the Army will

continue to buy repair services noncompetitively from the manufacturer.”¹¹⁷ The 2002 report goes on to state that DoD officials said the DOD regulations require that programs offices ensure access to needed technical data, and if this does not occur as part of the initial acquisition process, the government will have less bargaining power in future negotiations for data.¹¹⁸

The GAO reported in 2004 (GAO-04-715) on performance based logistics. DOD’s current policy for implementing performance based logistics as a preferred support approach at the weapon system platform level does not reflect the practices of private-sector companies that support expensive and complex equipment with life-cycle management issues.¹¹⁹ In the report GAO “reviewed logistics contracting practices of 14 private-sector companies from the air carrier, maritime shipping, energy exploration, mining, and entertainment industries — companies that use complex and costly equipment with life-cycle issues similar to those of military weapon systems and that are motivated by the desire to minimize costs and maximize profits to choose the most cost-effective option.”¹²⁰ The report states that the company the GAO visited told them when they purchase equipment they make sure to acquire the technical data necessary to support it, regardless of whether the company intends to support the equipment in-house or outsource some of its support operations.¹²¹ Several company officials said that it is best to obtain the technical data at the time the equipment is purchased, when the buyer has the most leverage in its negotiations with the manufacturer. Trying to obtain the technical data at a later time is difficult to negotiate and more expensive. These companies do not price their technical data items separately. DOD program offices, however, usually negotiate a price for maintenance-and-repair technical data separately from the price of the military hardware systems. According to service

competition advocate officials, program managers faced with limited acquisition dollars often make trade-off decisions to buy increased weapon system capability in lieu of technical data. The GAO concluded that when the program office does not obtain the technical data at the time of purchase, the future costs for obtaining these data are not knowable and, without the leverage of the original package purchase, could be prohibitively expensive.¹²²

The GAO continued to report in 2006 (GAO-06-839) on weapon systems technical data rights. This report centered on seven Air Force and Army weapons systems programs which encountered limitations in their sustainment plans for some fielded weapon systems because the Government lacked needed technical data rights. The report states the lack of technical data rights has limited the Services' flexibility to make changes to sustainment plans that are aimed at achieving cost savings and meeting legislative requirements regarding depot maintenance capabilities."¹²³

The GAO 2006 reports points out that the Air Force's initial failure to obtain the necessary technical data rights and inability to obtain those rights limited its ability to meet statutory obligations to maintain core logistics capability for the C-17 Globemaster III military transport aircraft.¹²⁴ The C-17 program office did not acquire the appropriate technical data needed to support maintenance at the public depots and did not even consider the aircraft's depot maintenance workload as necessary to support DOD's depot maintenance core capability. In fact, the C-17 prime contractor did not acquire data rights for C-17 components from the sub-contractors and consequently was not about to provide the data to the Air Force. The Air Force had to form partnerships with vendors, even as some contractors would not release pieces of technical data. The

failure to properly manage technical data rights issues placed a tremendous challenge on the program office to maintain the aircraft.¹²⁵

The GAO 2006 report also pointed out data rights issues with the Army's Up-armored High-Mobility Multipurpose Wheeled Vehicle program. The GAO reported the following:

"When the Army first developed the up-armored HMMWV in 1993, it did not purchase the technical data necessary to develop new sources of supply to increase production. Army officials anticipated fielding these vehicles to a limited number of Army units for reconnaissance and peacekeeping purposes. At that time, the Army did not obtain technical data required for the manufacture of up-armor HMMWVs. With the increasing threat of improvised explosive devices during operations in Iraq, demand for up-armored HMMWVs increased substantially, from 1,407 vehicles in August 2003 to 8,105 vehicles by September 2004. According to Army officials, the manufacturer declined to sell the rights to the technical data package. Because of the lack of technical data rights to produce up-armored HMMWVs, program officials explained they were unable to rapidly contract with alternate suppliers to meet the wartime surge requirement."¹²⁶

This illustrates some of the limitations military planners face when trying to project defense requirements out into the future. A 1993 HMMWV acquisition decision had far reaching impact to our wartime effort more than 10 years later, specifically with the surge requirement in Iraq and the need for up-armored systems to protect the Soldiers from Improvised Explosive Devices. This example also provides more credence to the need to acquire more technical data. As it stands, DOD policy is to acquire only the technical data, and the rights in that data, necessary to satisfy immediate agency needs.¹²⁷ We still face the complex question of what technical data is necessary to satisfy potential long-term program needs. Weapons systems have the potential to stay in the inventory for decades, and the government can face the evolution of contractor changes such as mergers, acquisitions, business model alterations or dissolution.¹²⁸

In a 2010 GAO report (GAO-10-833), in nearly 60 percent of 47 noncompetitive Defense contracts examined by the GAO, the DoD was unable to compete requirements with other contractors because it lacked appropriate technical data. This was due to a heavy reliance on certain contractors' expertise built over years of experience, which inhibited competition.¹²⁹ The report goes on to state that "most of the contracting and program officials at DoD that we spoke with pointed to the lack of access to technical data as one of the main barriers to competition. Some contracting officers described this condition as essentially being "stuck" with certain contractors."¹³⁰ For example, a \$46 million Navy contract for engineering services in the DoD's Prowler/Growler (EA-6B/EA-18G) electronics warfare aircraft programs could not be competitively awarded because the program offices had not procured the technical data packages, and only the original contractor, the developer of the system, had over 20 years of experience and expertise to perform the work.¹³¹ Officials interviewed for this report pointed out that the situation the government is currently experiencing is a result of decisions made years ago, when first acquiring a weapon system, to not purchase critical technical data packages for reasons that included budgetary constraints or a push toward streamlined contracting processes by purchasing commercial items. In this case, only the original equipment manufacturer had the technical data needed for follow-on maintenance and engineering support contracts.¹³²

In some cases, program offices have inquired about the cost of obtaining the technical data only to discover that the package is not for sale or purchase could be cost-prohibitive, especially if the systems and equipment have been out for decades. For instance, the Air Force requested an estimate of the cost to the government to purchase the technical data package for an aircraft program, and the contractor – an

original equipment manufacturer that had been working on the system for over 30 years -- replied that it was not for sale, but if they were to sell it the estimated price was \$1 billion.¹³³ In another case, a contractor with a \$4.8 billion sustainment and support contract told the Air Force that purchasing the data rights would cost the service more than \$1.3 billion.¹³⁴

Sometimes even when technical data are not the issue, the government may have little choice but to rely on the contractor that originally manufactured, and who, in some cases, designed and developed the weapon system. A few contracting and program officials interviewed for the 2010 report noted that for some DoD programs that it is difficult for the government to even make decisions or set requirements anymore. In some cases the contractor is the only source of the expertise for the system, having developed that expertise and the infrastructure over time.¹³⁵ In some cases the cost, time and money of changing a contractor may be relatively high. "For instance, the sole-source justification for an almost \$1 billion contract awarded in June 2008 for the overhaul and recapitalization of the Army's Blackhawk helicopter included a \$50 million estimate as the minimum investment needed to bring on another contractor and a lead time of 24 to 36 months. The justification further stated that the current contractor's knowledge could not be easily duplicated, even with significant investment and that it was unlikely that the government would be able to recover the investment cost through competition."¹³⁶

The DoD acquisitions process will continue to face challenges in the area of technical data rights. In some aspects it is unavoidable for some degree of non-competition to take place, especially in areas where there is only one original equipment manufacturer and the expertise lies with them. There are also times when it is

impractical for the government to compete a contract because of decisions made long ago or because it may be time and cost prohibitive. Congressional laws such as the John Warner National Defense Authorization Act of Fiscal Year 2007 and the Fiscal Year 2009 Weapons Systems Acquisition Reform Act require Defense program managers for major weapons systems to assess the long-term technical data needs of such systems and establish corresponding acquisition strategies needed to sustain such systems and subsystems over their life cycle. This requirement has been circulated in the DFARS 207-106 (S-70) and 227.7103-1(f) and 227.7203-1(e) for software.¹³⁷ The effect of intellectual property and technical data rights on competition strategy has to be considered when requirements are initially developed. It is paramount to the success on a program long term.

Government Intellectual Property Initiatives

The Department of Defense has implemented several key policies and initiatives in the area of technical data to reduce weapons systems cost. Two of the key initiatives that directly affect technical data rights are the Data Management Strategy (DMS) and Business Case Analysis (BCA). USD (AT&L) issued a memorandum on Data Management and Technical Data Rights dated July 19, 2007. It directed that program managers for ACAT I and II programs, regardless of planned sustainment approach, assess the long-term technical data needs of their systems and reflect that assessment in a Data Management Strategy (DMS). That DMS shall:¹³⁸

- Be integrated with other life cycle sustainment planning and included in the Acquisition Strategy.
- Assess the data required to design, manufacture and sustain the system as well as to support re-competition for production, sustainment or upgrade.
- Address the merits of including a priced contract option for the future delivery of technical data and intellectual property rights not acquired upon initial

contract award and shall consider the contractor's responsibility to verify any assertion of restricted use and release of data.

The DMS shall be approved in the context of the Acquisition Strategy prior to issuing a contract solicitation.

The September 2010 USD (AT&L) memorandum for Better Buying Power directed to all DoD services set a requirement for all open systems architecture and a set of rules for acquisition competition of technical data rights at Milestone B (Engineering and Manufacturing Development Phase) of system design. The DoD now requires a Business Case Analysis be conducted in concert with the engineering trade analysis that would outline an approach for using open-system architecture and acquiring technical data to ensure sustained considerations of competition in the acquisition weapons systems.¹³⁹ The concept of an open-systems architecture provides the framework for how to decompose a system into components that can be competed. The open-system architecture adopts open standards supporting modularity, loosely coupled, and highly cohesive systems and includes publishing of key interfaces within the system and full disclosure. A successful open-systems architecture will yield modular interoperable systems allowing components to be added, modified, replaced, removed, or supported by different vendors throughout the life cycle in order to drive opportunities for enhanced competition and innovation.¹⁴⁰

DoD now requires Business Case Analysis prior the entering Milestone B or other key decision point in the acquisition process in order to determine the levels and types of technical data and technical data rights needed to sustain their weapons systems. BCAs are basically another name for economic analysis or cost-benefit analysis. A Business Case Analysis is any documented, objective, value analysis

exploring costs, benefits, and risks.¹⁴¹ According to 10 USC 2366B (Major Defense Acquisition Program: Certification Required Before Milestone B or Key Decision Point Approval) a major defense acquisition program may not receive Milestone B approval, or Key Decision Point B approval until the milestone decision authority has received a Business Case Analysis and certifies on the basis of the analysis that -¹⁴²

- The program is affordable when considering the ability of the Department of Defense to accomplish the program's mission using alternative systems;
- Appropriate trade-offs among cost, schedule, and performance objectives have been made to ensure that the program is affordable when considering the per unit cost and the total acquisition cost in the context of the total resources available during the period covered by the future-years defense program submitted during the fiscal year in which the certification is made.
- Reasonable cost and schedule estimates have been developed;
- Funding is available to execute the product development and production plan under the program, through the period covered by the future-years defense program submitted during the fiscal year in which the certification is made.

Even though DoD now requires BCAs there are still some issues with implementation. One of the findings from a May 2011 GAO report (GAO-11-469) recommended DOD issue a policy instructing program managers on how to conduct and document Business Case Analyses and ensure key elements such as assumptions, feasible alternatives, and cost and benefits support their technical data decisions.¹⁴³

The DoD and the military departments have also issued several guidebooks for Program Managers that detail some requirements in DoD policy for conducting and documenting assessments for long-term technical data needs. For example, DoD has produced an Open-Systems Architecture Contract Guidebook to assist program manager to properly implement Open-System Architecture (OSA) in the procurement process for acquisition systems. The Navy published in 2007 a guideline for program managers to determine systems technical data called the Naval Open Architecture

Contract Guidebook for Program Manager.¹⁴⁴ The Army Guide for the Preparation of Product Data Management Systems provides the program manager and others involved in the acquisition and support of Army hardware and software, guidance in the proper preparation of a program-specific Data Management Strategy.

Recommendations

The DoD weapons systems acquisition process is tremendously complex. A whole host of policy and procedural changes have helped in some aspects, but there is still much to do to assist the programs' offices to obtain the needed Intellectual Property rights while not infringing on private industry's needs to protect its interests. The following are recommendations:

- Clarify the requirements for acquisition and procurement policies for documenting long-term technical-data requirements in program acquisition strategies and acquisition plans. The DOD should also clarify the level and type of detail required for acquiring technical data and technical-data rights expected to be included in acquisition strategies and acquisition plans.¹⁴⁵ The May 2011 GAO report pointed out DOD 5000.02 does not state to what level of detail a program manager are required to document, or the extent to which they should document their reasoning for acquiring or not acquiring technical data and technical data rights.
- The DoD should issue and updated policy for Program Managers for use in conducting Business Case Analyses that are part of the process for determining the levels and types of technical data and technical-data rights needed to sustain DOD's systems. Instructions should identify the specific elements to be included in the analyses and the types of information to be documented in reports on the analyses. A May 2011 GAO report on technical data found that program offices were deficient in this area.¹⁴⁶
- Consider the use of a priced option for future delivery of technical data not acquired initially by the contract. The 10 USC §2320(e)(2) requires program manager to address in the Data Rights and Acquisition Strategy the long term needs for systems and subsystems. A Business Case Analysis will have to be conducted to see the utility of this option. This is specifically for rights the government is not already entitled to such as form fit and function.
- Evaluate the data to the maximum extent possible during the source selection process for contract negotiations within the boundaries of 10 USC §2320(a)(2)(F). The Government may not compel a contractor to provide greater than Limited Rights for data or Restricted Rights for computer software developed at private expense. There is nothing in the statutes that say the

Government assessing higher evaluations for contract offer that supply more rights in data is prohibited. The Government has to be careful not to put too much emphasis on technical data during the competitive process as to not obtain a technically deficient design at too high a price.¹⁴⁷

- Continue the established Intellectual Property training down to the program office level. Issues with technical data and data rights will continue to be a challenge for both industry and the Government. A highly trained team of contracting officers and program managers will be more adept at dealing with this complex issue.

Conclusion

Intellectual Property is a highly complex issue faced by both DoD and the private sector. Over the past 60 years, the Government has displayed three distinct trends in relation to technical data rights. First, from the WWII era when the Government was the lead agent in funding of R&D, it had the policy of getting all the technical data and rights all the time. Second, in the early 1990s the private sector became the primary investor in R&D (approximately 70 percent) efforts, and the government's approach to data rights was not to focus as much on data rights, but to leverage commercial products to the maximum extent possible to meet the needs for DoD weapon systems while also trying to contain costs. Today, with Government funding constraints and growing weapon systems' costs there is a renewed effort by the Government to leverage technical data rights to the maximum extent possible to foster competition and support life-cycle support requirements.

Technical data plays a vital role throughout the life cycle of a weapons system and a program. It enhances the DOD decision making process for both future procurements and sustaining a weapon system, and it provides flexibility in future purchases. It is clear that the Government has more leverage at the beginning of a program to secure adequate rights to protect its interests. The more technical data rights purchased at the program initiation, the more flexibility the Government has in

production, support, maintenance, operations, and possible future system upgrades. If technical data is not bought upfront then the government may find itself dependent on the original equipment manufacturer (OEM). All of the military services have faced problems that increased costs to a program because of limited technical data rights. Program offices often have to resort to developing different ways of increasing production and buying spare parts, including soliciting more vendors. A point of caution is the DoD must ensure it takes into account intellectual capital in the equation when acquiring technical data license rights. The technical data itself may be less valuable than the contractor talents necessary to develop the weapon system.

Congress and the DoD have implemented legislation, policies and training that have helped to focus and improve cost efficiencies and increase focus on technical data rights in defense acquisition. The DoD's requirements for a Data Management Strategy and Business Case Analysis at program initiation (Milestone B) are illustrations of key changes intended to give decision makers the required information early in programs to determine viability. However, effective BCA still requires greater guidance for the Program Managers to ensure these analyses do not exclude key elements that support optimal decision making for rights to technical data. We have seen in the GAO reports where failure to acquire the appropriate rights at program initiation could be cost prohibitive to a future acquisition of that data.

DoD will continue to face challenges with programs if adequate data rights were not procured up front. The true test with the new policies and guidance is whether they will have a lasting effect on DoD's ability to acquire the technical data license to adequately implement the necessary competition to drive down cost and sustain systems. The concept of competition between the Government and private sectors

works in theory. It has the potential to drive down cost if the right contactors actually compete for DoD business. The reality is that a number of leading-edge technology companies are not willing to do business with DoD because of the issues related to their Intellectual Property rights. In practice, we will never have an optimized process for attaining technical data rights that fully meets the needs of either the Government or the private sector because our interests are diametrically opposed to each other.

Nonetheless, as the Government endeavors to develop leading-edge weaponry for the warfighter, it will have to ensure it procures the appropriate technical data rights from the private sector to effectively maintain its systems in a cost-constrained environment.

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